

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A method to form a magnetic write head for high track density applications, comprising:

providing a lower pole piece that further comprises a write-coil in a coil well, said coil well being filled with insulation and having a top surface;

depositing on said top surface a seed layer having a magnetic moment of at least 24 kilogauss;

forming, in said seed layer, a trench that extends down as far as said top surface and that has sloping sidewalls;

just filling said trench with a layer of a non-magnetic metal;

forming, a photoresist mold whose floor is said ~~top surface~~ seed layer and then electroplating, a write gap layer on said floor whereby said write gap layer overlaps both said seed layer and said layer of a non-magnetic metal;

then forming, through electroplating onto said write gap layer, an upper pole piece and then removing all photoresist; and

forming a back gap piece that is in magnetic contact with said seed layer and with said upper pole piece and that does not overlap said write gap layer.

2.(original) The method described in claim 1 wherein said seed layer is selected from the group consisting of CoFeN and CoFe.

3. (original) The method described in claim 1 wherein said seed layer is deposited to a thickness between about 1,000 and 5,000 Angstroms.

4.(currently amended) The method described in claim 1 wherein said layer of non-magnetic ~~material~~ metal is selected from the group consisting of Ru, NiCu, Cu, and NiCr.

Appl. No. 10/780,514

Amdt. dated 09/11/2006

Reply to Office action of 08/23/2006

5. (original) The method described in claim 1 wherein said write gap layer is selected from the group consisting of NiPd and NiP.

6. (original) The method described in claim 1 wherein said write gap layer is deposited to a thickness between about 700 and 1,500 Angstroms.

7. (original) The method described in claim 1 wherein said upper pole piece is CoNiFe.

8.(currently amended) The method described in claim 1 wherein said upper pole piece is deposited to a thickness between about 2 and 4 microns.

9.(currently amended) A process to manufacture a planar magnetic write head, comprising:

providing a lower magnetic shield layer;

forming a disc of dielectric material on said lower magnetic shield a layer;

forming, on said disc, a lower coil;

depositing and then patterning a first layer of ferromagnetic material to form a bottom section of a lower pole, having a top surface, that includes a centrally located lower trench on whose floor rest said dielectric disc and lower coil;

overfilling said lower trench with a first layer of insulating material and then planarizing so that said filled trench has an upper surface that is coplanar with the upper surface of said lower pole bottom section;

depositing, and then patterning, a second insulating layer to form a first lid that fully covers said lower coil and said lower trench;

forming, on said first lid, an upper coil;

depositing and then patterning a second layer of ferromagnetic material thereby completing formation of the lower pole, including a top surface and a centrally located upper trench on whose floor rest said first lid and said upper coil;

depositing on said top surface a seed layer having a magnetic moment of at least 24 kilogauss;

forming, in said seed layer, a trench that extends down as far as said top surface and that has sloping sidewalls;

just filling said trench with a layer of a non-magnetic metal;

forming, a photoresist mold whose floor is said ~~top-surface~~ seed layer and then electroplating, a write gap layer on said floor whereby said write gap layer overlaps both said seed layer and said layer of a non-magnetic metal;

then forming, through electroplating onto said write gap layer, an upper pole piece and then removing all photoresist; and

forming a back gap piece that is in magnetic contact with said seed layer and with said upper pole piece and that does not overlap said write gap layer.

10. (original) The process recited in claim 9 wherein said lower magnetic shield layer is a top shield of a magnetic read head.

11. (original) The process recited in claim 9 wherein said seed layer is selected from the group consisting of CoFeN and CoFe.

12. (original) The process recited in claim 9 wherein said seed layer is deposited to a thickness between about 1,000 and 5,000 Angstroms.

13. (original) The process recited in claim 9 wherein said layer of non-magnetic material is selected from the group consisting of Ru, NiCu, Cu, and NiCr.

14. (original) The process recited in claim 9 wherein write gap layer is selected from the group consisting of NiPd and NiP.

15. (original) The process recited in claim 9 wherein said write gap layer is deposited to a thickness between about 700 and 1,500 Angstroms.

16. (original) The process recited in claim 9 wherein said upper pole piece is CoNiFe.

17.(currently amended) The process recited in claim 9 wherein said upper pole piece is deposited to a thickness between about 2 and 4 microns.

18 – 34 Canceled.